Message Text

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INFO OCT-01 NEA-10 ISO-00 SOE-02 AID-05 CEA-01 CIAE-00
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SS-15 STR-07 TRSE-00 ACDA-12 SES-02 SAA-01 SAS-02
AF-10 ARA-14 EA-12 EUR-12 /191 W
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FM AMEMBASSY DAMASCUS
TO SECSTATE WASHDC 9488

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DEPT FOR CECILLE LEDSKY OES/NET

E.O. 11652 N/A
TAGS: ENRG,TECH, SY
SUBJECT: COST OF ELECTRICITY PRODUCTION USING CONVENTIONAL
ENERGY SOURCES

REF: STATE 210477

1. IN RESPONSE TO QUESTIONS IN REFTEL, PARA.2, EMBASSY NOTES THAT BASIC INFORMATION FOR SYRIA CAN BE FOUND IN FOLLOWING REPORTS:
A) PROJECT PAPER, SYRIA-RURAL ELECTRIFICATION, AGENCY FOR INTERNATIONAL DEVELOPMENT. SEPTEMBER, 1977 (HEREAFTER REFERRED TO AS AID REPORT): AND B) APPRAISAL OF MEHARDEH THERMAL POWER PROJECT, ETABLISSEMENT PUBLIC DE L'ELECTRICITE. INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT. FEBRUARY 28, 1974 (REPORT NO. 245A-SYR),(HEREAFTER REFERRED TO AS IBRD REPORT). BOTH THESE REPORTS ARE AVAILABLE IN WASHINGTON FROM AID AND FROM IBRD, (POWER AND ENERGY DEVELOPMENT DIVISION, EUROPE, MIDDLE EAST AND NORTH AFRICA REGION). EMBASSY ALSO POUCHING INFORMATION FROM MINISTRY OF ELECTRICITY ON INSTALLED GENERATING CAPACITY
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AND ON CONSUMPTION.

2. FOLLOWING IS INTENDED AS A GUIDELINE OF AVAILABLE INFORMATION WHICH CAN BE USED TO ANSWER DETAILED AND TECHNICAL QUESTIONS CONTAINED REFTEL. IT IS A NON-TECHNICAL DISCUSSION OF POINTS RELEVANT TO COST SITUATION IN SYRIA.

3. COST OF ELECTRICITY FOR AVAILABLE SOURCES: TARIFFS FOR ELECTRICITY CONSUMPTION IN SYRIA INCLUDE FLAT KWH RATES FOR DOMESTIC AND GENERAL LIGHTING, BLOCK KWH RATES FOR SMALLER INDUSTRIAL AND COMMERCIAL CONNECTIONS IN LOW TENSION NETWORKS, AND TIME OF DAY KWH RATES FOR LARGER INDUSTRIAL AND COMMERCIAL CONNECTION WHERE METERS ARE AVAILABLE.(ACTUAL TARIFF STRUCTURE IS TOO INVOLVED TO REPRODUCE HERE: EMBASSY IS AIRPOUCHING A COPY ASAP). RATES ARE EXPECTED TO INCREASE SHORTLY BY ABOUT 10 PERCENT. AS FOR THE COST OF ALTERNATE POWER SOURCES TO EPE, IN THE IBRD REPORT, CERTAIN ASSUMPTIONS WERE MADE CONCERNING FUEL COSTS FOR VARIOUS POWER GENERATION PLANTS.(SUMMARIZED BELOW.),(ONE USDOL. EQUALS LS 3.9):

EXISTING STEAM PLANT	18.90
FUTURE STEAM PLANT	13.50-15.30
GAS TURBINES FUELED BY:	
RESIDUAL FUEL	21.00-34.60
CRUDE	23.30-23.70
GAS	4.10

COST OF GAS REFLECTS ANNUAL COST OF PIPELINE, AND ZERO VALUE (AT PRESENT) OF GAS THAT HAS NO ALTERNATIVE USE.THERE IS, OF COURSE, NO FUEL COST TO HYDROPOWER.

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4. DISTANCE OF TRANSMISSION TO USER. TWO-THIRDS OF GENERATING CAPACITY IN SYRIAN NETWORKS CONCENTRATED AT THE THAWRA DAM AND POWER STATION. DAM IS 75 MILES FROM ALEPPO, SYRIA'S SECOND LARGEST CITY WHICH CONSUMES 26 PERCENT OF TOTAL ELECTRICITY AND APPROX. 200 MILES FROM DAMASCUS, WHICH CONSUMES 38 PERCENT. FURTHER COMPLICATION IN CALCULATING COSTS INTRODUCED BY FACT THAT HIGH TENSION TRANSMISSION LINES HAVE CAPACITY TO CARRY ONLY 450 MW OUTSIDE EUPHRATES AREA. INSTALLED CAPACITY AT DAM, WHEN FULLY OPERATIONAL WILL BE 800 MW. FOR THIS REASON, THERE ARE LOSSES TO BE TO ONE SIXTH OF TOTAL ENERGY PRODUCED. (IBRD REPORT CONTAINS MAP OF SYRIA'S TRANSMISSION NETWORK WHICH CAN BE USED TO DETERMINE DISTANCES MORE EXACTLY). SYRIA'S MAIN ELECTRICITY PROBLEM HAS BEEN THE PRESENCE OF THE BULK OF ITS GENERATING CAPACITY FAR AWAY FROM THE MAIN CONSUMPTION CENTERS. THIS HAD LED TO THE CONSTRUCTION OF LARGE STEAM POWER PLANTS CLOSE TO POPULATION CENTERS, AND THE ACQUISITIONS OF EXPENSIVE GAS TURBINE FACILITIES. FOR THIS REASON (AND BECAUSE CONSUMPTION WILL REQUIRE INCREASED, AND HIGH COST, IMPORTS), SYRIAN OFFICIALS HAVE SHOWN INTEREST IN BOTH NUCLEAR POWER AND SOLAR ENERGY.

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5. CAPITAL COST OF GENERATING EQUIPMENT: IBRD STUDY ANALYSES TOTAL COSTS OF MEHARDEH STEAM POWER PLANT UNDER DIFFERENT ASSUMPTIONS AS TO ENERGY DEMAND, SIZE OF STEAM UNITS, ETC. IN COMPARISON WITH COST OF GAS TURBINE, AND THAWRA DAM EXTENSION. (ANNEX 8, JUSTIFICATION OF PROPOSED PROJECT). THIS ANALYSIS SHOULD CONTAIN BASIC DATA TO ANSWER THIS QUESTION.

6. COST OF MONEY TO PURCHASE CAPITAL EQUIPMENT: MOST, IF NOT ALL, OF SYRIAN CAPITAL GOODS EXPENDITURES IN THE FIELD OF ELECTRICITY WERE MADE BY MEANS OF LOW-COST FOREIGN ASSISTANCE LOANS, AND BY GRANTS. THE AID REPORT (PP. 11-14) DESCRIBES THE VARIOUS TERMS IMPOSED BY THE IBRD, AID, WEST GERMANY, FRANCE, THE KUWAIT DEVELOPMENT FUND, THE ABU DHABI
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FUND, AND THE GERMAN DEMOCRATIC REPUBLIC. THE TERMS OF THE IBRD LOAN TO FINANCE THE MEHARDEH PROJECT CAN BE TAKEN AS TYPICAL. THE PROBLEM IS COMPLICATED BY THE FACT THAT LOANS MADE BY THE SOVIET UNION TO BUILD THE THAWRA DAM, ON WHICH SO MUCH OF SYRIA'S GENERATING CAPACITY RELIES, WERE REPAID BY MEANS OF BARTER ARRANGEMENTS, THE DETAILS OF WHICH ARE UNKNOWN.

7. LOAD FACTOR: THE AID REPORT (ANNEX B,P.10) INDICATES THAT THE LOAD FACTOR IN 1176 WAS 51 PERCENT.THIS WAS EXPECTED TO RISE TO 60 PERCENT BY 1977 AND TO 67 PERCENT BY 1978 AND THEREAFTER.

8. COST OF FUEL FOR GENERATION: THE AID REPORT FINANCIAL ANALYSIS (ANNEX D) PROVIDES DATA ON FUEL EXPENSES FOR THE PERIOD 1972-1976, AND FORECASTS FOR THE PERIOD 1977-1982.
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Message Attributes

Automatic Decaptioning: X
Capture Date: 01 jan 1994
Channel Indicators: n/a
Current Classification: UNCLASSIFIED
Concepts: COSTS, PRODUCTION, ENERGY, LESS DEVELOPED COUNTRIES
Control Number: n/a
Copy: SINGLE
Draft Date: 31 aug 1978
Decaption Date: 01 jan 1960
Decaption Note:
Disposition Action: n/a
Disposition Approved on Date:
Disposition Case Number: n/a
Disposition Comment:
Disposition Date: 01 jan 1960
Disposition Event:
Disposition History: n/a
Disposition Reason:
Disposition Remarks:
Document Number: 1978DAMASC05119
Document Source: CORE
Document Unique ID: 00
Drafter: n/a
Enclosure: n/a
Executive Order: N/A
Errors: N/A
Expiration:
Film Number: D780355-1133
Format: TEL
From: DAMASCUS
Handling Restrictions: n/a
Image Path:
ISecure: 1
Legacy Key: link1978/newtext/t1978085/aaaaadnp.tel
Line Count: 179
Litigation Code IDs:
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Message ID: a2ef6f61-c288-dd11-92da-001cc4696bcc
Office: ACTION OES
Original Classification: UNCLASSIFIED
Original Handling Restrictions: n/a
Original Previous Classification: n/a
Original Previous Handling Restrictions: n/a
Page Count: 4
Previous Channel Indicators: n/a
Previous Classification: n/a
Previous Handling Restrictions: n/a
Reference: 78 STATE 210477
Retention: 0
Review Action: RELEASED, APPROVED
Review Content Flags:
Review Date: 29 mar 2005
Review Event:
Review Exemptions: n/a
Review Media Identifier:
Review Release Date: N/A
Review Release Event: n/a
Review Transfer Date:
Review Withdrawn Fields: n/a
SAS ID: 1697492
Secure: OPEN
Status: NATIVE
Subject: COST OF ELECTRICITY PRODUCTION USING CONVENTIONAL ENERGY SOURCES
TAGS: ENRG, TECH, SY
To: STATE
Type: TE
vdkvgwkey: odbc://SAS/SAS.dbo.SAS_Docs/a2ef6f61-c288-dd11-92da-001cc4696bcc
Review Markings:
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20 Mar 2014
Markings: Sheryl P. Walter Declassified/Released US Department of State EO Systematic Review 20 Mar 2014